

PREFACE

There are several things the editorial staff feels will help the readers understand this report. First, the material in this report was prepared by many Federal and State agencies as well as other non-governmental organizations. These contributions were of varying sizes and subjects, and were edited only to have a consistent format, thus maintaining the original author's style and intent. They also contain the numeric values calculated at their agency, which in some cases may differ slightly from those of other agencies due to calculation procedures. Minor differences were not resolved.

Second, there is a difference in spelling the names of some of the rivers, depending upon the spelling preference in the country. The proper spelling are consistent with the location being discussed. Example of these differences include:

<u>United States</u>	<u>Canada</u>
Kootenai River	Kootenay River
Okanogan River	Okanagan River
Pend Oreille River	Pend d'Oreille River

Third, is the inclusion of equivalent metric units. The inclusion of metric values is limited to the introduction and historical portions of this report with the one exception: water quality data, including water temperatures, which is measured and reported in metric units. Regarding the other hydrologic and meteorologic data, the agencies that collect and distribute these data do so in English units, *i.e.*, feet, inches, acre-feet, degrees Fahrenheit, etc, and are published as such in this report. Standard SI unit conversions are used in this report.

Fourth, all pool, reservoir, and lake surface levels are expressed in elevation, *i.e.*, feet above mean sea level. Streamgage heights, on the other hand, are expressed in feet above a datum specific to each individual gage.

Unless otherwise noted, a standard 30-year period (1961-90) is used to compute means for hydrologic data. (In Canada this is computed on a calendar year basis whereas in the United States a water year period is used.) These mathematical means will be referred to as "normals" with arithmetic means of other time periods referred to as "averages." Except for temperatures all departures from normals are expressed in percent of the normal value.

Finally, this is a report on water management activities that pertain to the operation of dams and reservoirs. Other water-related activities, for example, dredging of coastal harbors and their associated, water quality studies, as well as adjudication of groundwater rights, are not project operations activities and, therefore, are not included in this report.

Copies of some of the back issues of this report, dating back to 1971, are still available. Copies may be obtained by contacting the Secretary to the Columbia River Water Management Group listed inside the back cover of this report. As time permits these publications will be added to the CRWMG web site.

This report contains information submitted by representatives of the state and Federal agencies belonging to the Columbia River Water Management Group and was edited and published by the US Army Corps of Engineers, Northwestern Division-North Pacific Region, Water Management Division. Peter Brooks, Chief, Hydrologic Engineering Branch, gave overall guidance for this report format and content. The editor, Roger Ross, coordinated the compiling, editing, and preparing of this report. Rae Lyn Jones, did data entry and word processing, Debra Peterson did the web site work, and Richard Delaney, the computer graphics.

Special appreciation goes to Cheryl Woodall who was always ready with a camera and whose photographs appear in this report.

- Cover photograph of John Day Dam on the Columbia River. In the foreground is part of the new fish bypass system built to aid in the passage of downstream migrating fish.

"Thank you" also goes to the participating agencies whose staffs contributed articles for this report.